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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,402	02/01/2001	Takashi Tanimoto	10449-034001/PIS2000190US	8002

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EXAMINER

SONG, HOON K

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/775,402

Applicant(s)

TANIMOTO, TAKASHI

Examiner

Hoon K Song

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 12-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Maki (US 5777317).

Regarding claim 1, Maki teaches an apparatus for driving a CCD image sensor which performs charge transfer operation in accordance with a pulse signal (figure 5), comprising:

a drive circuit (14) for supplying a pulse signal to the CCD image sensor (11);
and

a power supply circuit (figure 1), connected to the drive circuit (14), for supplying the drive circuit with a voltage for generating the pulse signal,

wherein the power supply circuit (figure 1) includes an over-boosting circuit (18) for temporarily over-boosting the voltage supplied to the drive circuit to generate an over-boosted voltage, prior to the charge transfer operation of the CCD image sensor (column 5 line 42+).

Regarding claim 2, Maki teaches that the power supply circuit (figure 1) includes a constant voltage control circuit that performs constant voltage control on the voltage

supplied to the drive circuit, and wherein the constant voltage control circuit is inactivated when the over-boosting circuit is executing an over-boosting operation.

Regarding claims 3 and 10-11, Maki teaches that the over-boosting circuit is a charge pump type boosting circuit that performs a boosting operation in accordance with a clock signal (theta H1 and H2), and the constant voltage control circuit thins the clock signal in the constant voltage control and supplies a thinned clock signal to the charge pump type boosting circuit, and wherein constant voltage control circuit supplies the clock signal without thinning the clock signal to the charge pump type boosting circuit when the charge pump type boosting circuit performs the over-boosting operation (column 3 line 57+ and figure 5).

Regarding claims 4 and 9, Maki teaches that the CCD image sensor is a frame transfer type CCD image sensor (well known) including an image sensing section (11) for generating charges by performing photoelectric conversion and a storage section (17), located separate from the image sensing section, for temporarily storing charges transferred from the image sensing section; and wherein the drive circuit includes a vertical driver (theta ROG) for generating a pulse signal for charge transfer from the image sensing section to the storage section.

Regarding claims 5 and 7, Maki teaches that the drive circuit and the power supply circuit are formed on a single semiconductor integrated circuit substrate (figure 5).

Regarding claims 6 and 8, Maki teaches that the CCD image sensor generates an image sensor output signal in accordance with charges every predetermined period,

and the power supply circuit is enabled when the CCD image sensor is stopping generation of the image sensor output signal (well know, figure 5).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miida (US 6476371B1) and Merrill et al. (US 6211510B1) teaches methods of boosting pixels reading.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon K Song whose telephone number is 703-308-2736. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-4858 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Hoon Song
April 27, 2003



**DAVID V. BRUCE
PRIMARY EXAMINER**